

WHAT IS CLAIMED IS:

1. A polishing element, comprising:

a polishing platen;

a polishing sub-pad set up over the polishing platen; and

5 a polishing pad set up over the polishing sub-pad;

wherein a first surface of the polishing sub-pad interfaces with the polishing pad and a second surface of the polishing sub-pad interfaces with polishing platen, and either the first surface or the second surface of the polishing sub-pad is an undulating surface.

10 2. The polishing element of claim 1, wherein the undulating surface of the polishing sub-pad comprises a plurality of alternately positioned grooves and protruding sections.

3. The polishing element of claim 2, wherein the grooves form a pattern comprising a series of straights, a series of crosses, concentric circles, spiral or any 15 combination of them.

4. The polishing element of claim 1, wherein both the first surface and the second surface of the polishing sub-pad are undulating surfaces.

5. The polishing element of claim 1, wherein the polishing pad comprises a fixed abrasive polishing pad.

20 6. A polishing element, comprising:

a polishing platen;

a polishing sub-pad set up over the polishing platen; and

a polishing pad set up over the polishing sub-pad;

wherein a first surface of the polishing sub-pad interfaces with the polishing pad and a second surface of the polishing sub-pad interfaces with polishing platen, a third surface of the polishing pad interfaces with the polishing sub-pad and a fourth surface of the polishing platen interfaces with the polishing sub-pad, and the first 5 surface, the second surface, the third surface or the fourth surface is a undulating surface.

7. The polishing element of claim 6, wherein both the first surface and the second surface of the polishing sub-pad is an undulating surface.

8. The polishing element of claim 6, wherein the undulating surface of the 10 polishing sub-pad comprises a plurality of alternately positioned grooves and protruding sections.

9. The polishing element of claim 8, wherein the grooves form a pattern comprising a series of straights, a series of crosses, concentric circles, spiral or any combination of them.

15 10. The polishing element of claim 6, wherein the polishing pad comprises a fixed abrasive polishing pad.

11. A polishing platen for assembling with a polishing sub-pad and a polishing pad to form a polishing element, wherein the polishing platen has a body, and a surface 20 of the polishing platen interfaces with the polishing sub-pad such that the surface is an undulating surface.

12. The polishing platen of claim 11, wherein the undulating surface of the polishing platen comprises a plurality of alternatively positioned grooves and protruding sections.

13. The polishing platen of claim 12, wherein the grooves form a pattern comprising a series of straights, a series of crosses, concentric circles, spiral or any combination of them.

14. A polishing sub-pad for assembling with a polishing platen and a polishing
5 pad to form a polishing element, wherein the polishing sub-pad has a body, and a first surface of the polishing sub-pad interfaces with the polishing pad and a second surface of the polishing sub-pad interfaces with the polishing platen such that at least one of the first surface or the second surface of the polishing sub-pad is an undulating surface.

15. The polishing sub-pad of claim 14, wherein the undulating surface of the
10 polishing sub-pad comprises a plurality of alternatively positioned grooves and protruding sections.

16. The polishing sub-pad of claim 15, wherein the grooves form a pattern comprising a series of straights, a series of crosses, concentric circles, spiral or any combination of them.

15 17. The polishing sub-pad of claim 14, wherein both the first surface and the second surface of the polishing sub-pad are undulating surfaces.

18. A polishing pad for assembling with a polishing platen and a polishing sub-pad to form a polishing element, wherein the polishing pad has a body, and a surface of the polishing pad interfaces with the polishing sub-pad such that the surface is an
20 undulating surface.

19. The polishing pad of claim 18, wherein the surface of the polishing pad comprises a plurality of alternately positioned grooves and protruding sections.

20. The polishing pad of claim 19, wherein the grooves form a pattern comprising a series of straights, a series of crosses, concentric circles, spiral or any combination of them.

21. The polishing pad of claim 18, wherein the polishing pad comprises a fixed
5 abrasive polishing pad.